

Amendments to the Specification:

Please replace the two paragraphs on page 21 with the following amended paragraphs according to the proposed new FIGS. 10 and 11:

The system 100 in FIG. 1 may be used as a highly sensitive wireless RF or microwave receiver or transceiver as shown in the device 1000 in FIG. 10. An antenna (1010) may be used to receive the signal 132 and supply the received signal 132 to the electrical coupler 130. When a received signal 132 matches the energy gap 840 of the ground states 801a and 801c, the information in the signal 132 is converted into the optical domain in the optical output 116. The high Q factor of the resonator 101 effectuates an amplification of the modulation in the received electrical signal upon conversion into the optical modulation. The higher the Q, the greater this amplification. Therefore, the system 100 may be used for receiving signals in a wireless network of RF transceivers such as in a base station or a moving transceiver in a wireless communication network or in a satellite communication system. This system 100 can also detect electromagnetic radiation emitted from a medium or sample under measurement. The measured modulation can be extracted to determine certain properties, such as the molecular or atomic structure of the sample.

In addition, the system 100 may be used as a highly efficient and low power optical modulator for a range of applications, including optical transmitter or transceiver in an optical communication systems or as an communication interface between an electronic wireless or wired communication system (1110) and an optical free-space or fiber communication system (1120) as shown in an exemplary system 1100 in FIG. 11.